

Cancel without prejudice or disclaimer claims 150-282 (those claims having been previously added by Applicants' March 5, 1996 Preliminary Amendment).

Add new claims 283 - 437 as follows:

-- 283. (NEW) A composition of matter comprising:

a first part which comprises a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

a second part which comprises more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more signal generating portions capable of providing a detectable signal. --

-- 284. (NEW) A composition of matter comprising:

a first part which comprises an analyte having one or more molecularly recognizable portions thereon;

a second part which comprises a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with said molecularly recognizable analyte portion, and a second portion comprising one or more nucleic acid sequences or segments; and

a third part which comprises more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more signal generating portions capable of providing a detectable signal. --

-- 285. (NEW) A composition of matter comprising:

a complex which comprises:

a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more signal generating portions capable of providing a detectable signal. --

Sub
E1
cont
C1

-- 286. (NEW) A composition of matter comprising:

a complex which comprises:

an analyte having one or more molecularly recognizable portions thereon;

a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with said molecularly recognizable analyte portion and a second portion comprising one or more nucleic acid sequences or segments; and

more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more signal generating portions capable of providing a detectable signal. --

-- 287. (NEW) A composition of matter comprising:

a first part which comprises more than one molecular bridging entity, each such entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

a second part which comprises more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more signal generating portions capable of providing a detectable signal. --

-- 288. (NEW) A composition of matter comprising:

a first part which comprises an analyte having one or more molecularly recognizable portions thereon;

a second part which comprises more than one molecular bridging entity, each such entity comprising a first portion capable of recognizing and binding to or hybridizing with said molecularly recognizable analyte portion and a second portion comprising one or more nucleic acid sequences or segments; and

a third part which comprises more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more signal generating portions capable of providing a detectable signal. --

-- 289. (NEW) A composition of matter comprising:

a complex which comprises:

more than one molecular bridging entity, each such entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more signal generating portions capable of providing a detectable signal. --

-- 290. (NEW) A composition of matter comprising:

a complex which comprises:

an analyte having one or more molecularly recognizable portions thereon;

more than one molecular bridging entity, each such entity comprising a first portion capable of recognizing and binding to or hybridizing with said molecularly recognizable analyte portion and a second portion comprising one or more nucleic acid sequences or segments; and

more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more signal generating portions capable of providing a detectable signal. --

-- 291. (NEW) A composition of matter comprising:

a first part which comprises a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

a second part which comprises more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more polynucleotides which have been chemically modified or artificially altered. --

-- 292. (NEW) A composition of matter comprising:

a complex which comprises:

a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more polynucleotides which have been chemically modified or artificially altered. --

-- 293. (NEW) A composition of matter comprising:

a first part which comprises an analyte having one or more molecularly recognizable portions thereon;

a second part which comprises a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

a third part which comprises more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more polynucleotides which have been chemically modified or artificially altered. --

Sub
K
cont
C1

-- 294. (NEW) A composition of matter comprising:

a complex which comprises:

an analyte having one or more molecularly recognizable portions thereon;

a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more polynucleotides which have been chemically modified or artificially altered. --

-- 295. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said analyte comprises a biological system. --

-- 296. (NEW) The composition according to claim 295, wherein said biological system comprises at least one member selected from the group consisting of a virus or a viral component thereof, and a cell or a cellular component thereof. --

-- 297. (NEW) The composition according to claim 296, wherein said cell or component thereof comprises a bacterium or a bacterial component thereof. --

-- 298. (NEW) The composition according to claim 295, wherein said biological system comprises a pathogen or a component thereof. --

C1
-- 299. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said analyte is selected from the group consisting of a nucleic acid and a protein. --

Sub E2
-- 300. (NEW) The composition according to claim 299, wherein said nucleic acid is selected from the group consisting of an oligo- or polyribonucleotide, an oligo- or polydeoxyribonucleotide, a poly-purine, a ~~poly-pyrimidine~~ ^{poly-pyrimidine} and an analog-containing polymer, or any combination of the foregoing. --

-- 301. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said molecular bridging recognizing first portion comprises a low molecular weight organic compound. --

-- 302. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said molecular bridging recognizing first portion is selected from the group consisting of an antigen and an antibody. --

-- 303. (NEW) The composition according to claim 302, wherein said antibody comprises a polyclonal or a monoclonal antibody. --

-- 304. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said molecular bridging recognizing first portion is selected from the group consisting of a saccharide and a lectin. --

-- 305. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said molecular bridging recognizing first portion is selected from the group consisting of a hormone and a receptor therefor. --

C1
-- 306. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said molecular bridging recognizing first portion is selected from the group consisting of an enzyme, an allosteric effector, an enzyme substrate and an enzyme cofactor. --

-- 307. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said molecular bridging recognizing first portion is selected from the group consisting of a ligand and a receptor therefor. --

-- 308. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said molecular bridging recognizing first portion is selected from the group consisting of a protein and a protein receptor therefor. --

-- 309. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said molecular bridging recognizing first portion comprises a nucleic acid. --

Sub E3
-- 310. (NEW) The composition according to claim 309, wherein said nucleic acid comprises an oligo- or polynucleotide. --

Enz-11(C2)(D1)(C2)

-- 311. (NEW) The composition according to claim 310, wherein said oligo- or polynucleotide comprises a modified oligo- or polynucleotide. --

sub 311
y1
D
--312. (NEW) The composition according to claim 311, wherein said modified oligo- or polynucleotide ^{comprises} ~~comprises~~ one or more nucleotides modified on the sugar, phosphate, base, or combinations thereof. --

sub 312
E4
-- 313. (NEW) The composition according to claim 310, wherein said oligo- or polynucleotide is single-stranded or partially double-stranded. --

-- 314. (NEW) The composition according to claim 310, wherein said oligo- or polynucleotide is circular or linear. --

sub 314
C1
F2
-- 315. (NEW) The composition according to claim 310, wherein said oligo- or polynucleotide is selected from the group consisting of an oligo- or polyribonucleotide, an oligo- or polydeoxyribonucleotide, a poly-purine, a poly-pyrimidine and an analog-containing polymer, or any combination of the foregoing. --

-- 316. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said nucleic acid sequence or segment in the molecular bridging entity second portion comprises an oligo- or polynucleotide. --

-- 317. (NEW) The composition according to claim 315, wherein said oligo- or polynucleotide comprises a modified oligo- or polynucleotide. --

sub 317
y1
D
--318. (NEW) The composition according to claim 317, wherein said modified oligo- or polynucleotide comprises one or more nucleotides modified on the sugar, phosphate, base or combination thereof. --

Sub
F3

-- 319. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said nucleic acid sequences or segments in the molecular bridging entity second portion is single-stranded or partially double-stranded. --

-- 320. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said nucleic acid sequences or segments in the molecular bridging entity second portion is linear or circular. --

sl
F3

-- 321. (NEW) The composition according to claim 316, wherein said oligo- or polynucleotide is selected from the group consisting of an oligo- or polyribonucleotide, an oligo- or polydeoxyribonucleotide, a poly-purine, a poly-pyrimidine and an analog-containing polymer, or any combination of the foregoing. --

C1

-- 322. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said nucleic acid sequences or segments in the molecular bridging entity second portion ^{are} derived from a phage selected from the group consisting of a T even phage, a filamentous phage, an M13 phage, or an M13 phage variant. --

-- 323. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said molecular bridging entity second portion comprises a nucleic acid sequence or segment of repeating low complexity. --

-- 324. (NEW) The composition according to claim 323, wherein said nucleic acid sequence or segment of repeating low complexity is selected from the group consisting of a poly G or polydeoxy G, poly GT or polydeoxy GT, poly C or polydeoxy C, poly T or polydeoxy T, poly A or polydeoxy A, poly CA or polydeoxy CA, poly GA or polydeoxy GA, poly GAT or polydeoxy GAT, and poly GTA or polydeoxy GTA. --

-- 325. (NEW) The composition according to claim 310, wherein said molecular bridging entity first portion and said molecular bridging entity nucleic acid second portion are incapable of hybridizing to identical oligo- or polynucleotide sequences. --

-- 326. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said nucleic acid sequences or segments in the molecular bridging entity second portion are covalently attached to one another.

-- 327. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said signalling entity nucleic acid portion comprises an oligo- or polynucleotide. --

C1
82
FY
-- 328. (NEW) The composition according to claim 327, wherein said signalling entity oligo- or polynucleotide is selected from the group consisting of an oligo- or polyribonucleotide, an oligo- or polydeoxyribonucleotide, a poly-purine, a poly-pyrimidine and an analog-containing polymer, or any combination of the foregoing. --

-- 329. (NEW) The composition according to claim 327, wherein said oligo- or polynucleotide comprises a modified oligo- or polynucleotide. --

Sub
M3
D
--330. (NEW) The composition according to claim 329, wherein said modified oligo- or polynucleotide comprises one or more nucleotides modified on the sugar, phosphate, base or combinations thereof. --

-- 331. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said signalling entity nucleic acid portion is single-stranded or partially double-stranded. --

-- 332. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said signalling entity nucleic acid portion is linear or circular. --

-- 333. (NEW) The composition according to claim 332, wherein said signalling entity nucleic acid portion is a polymer derived from a linear or circular nucleic acid molecule covalently attached to a signal generating portion or a signalling chemical moiety. --

-- 334. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said signalling entity nucleic acid portion is derived from a phage selected from the group consisting of a T even phage, a filamentous phage, and an M13 phage, or an M13 phage variant. --

-- 335. (NEW) The composition according to claim 329, wherein said signalling entity modified oligo- or polynucleotide comprises a naturally occurring modified oligo- or polynucleotide. --

C1 -- 336. (NEW) The composition according to claim 335, wherein said signalling entity modified oligo- or polynucleotide carries a cloned insert. --

-- 337. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said signalling entity nucleic acid portion comprises a nucleic acid sequence or segment of repeating low complexity. --

-- 338. (NEW) The composition according to claim 337, wherein said nucleic acid sequence or segment of repeating low complexity is selected from the group consisting of a poly G or polydeoxy G, poly GT or polydeoxy GT, poly C or polydeoxy C, poly T or polydeoxy T, poly A or polydeoxy A, poly CA or polydeoxy CA, poly GA or polydeoxy GA, poly GAT or polydeoxy GAT, and poly GTA or polydeoxy GTA. --

-- 339. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said signal generating portion or said one or more chemically modified or artificially altered polynucleotides are capable of directly providing a detectable signal. --

-- 340. (NEW) The composition according to claim 339, wherein said direct signal providing signal generating portion comprises a radioactive compound. --

-- 341. (NEW) The composition according to claim 339, wherein said direct signal providing signal generating portion is selected from the group consisting of a fluorogenic compound, a phosphorescent compound, a chromogenic compound, a chemiluminescent compound and an electron dense compound. --

-- 342. (NEW) The composition according to claim 339, wherein said direct signal providing signal generating portion comprises an enzyme. --

C1
Sub
E6
-- 343. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said signal generating portion or said one or more chemically modified or artificially altered polynucleotides are indirectly capable of indirectly providing a detectable signal. --

-- 344. (NEW) The composition according to claim 343, wherein said indirect signal providing signal generating portion is selected from the group consisting of an antibody, an antigen, a hapten, a receptor, a ligand and an enzyme. --

-- 345. (NEW) The composition according to claim 343, wherein said indirect signal providing signal generating portion comprises a polynucleotide sequence capable of recognizing a signal-containing moiety. --

-- 346. (NEW) The composition according to claim 343, wherein said indirect signal providing signal generating portion comprises a compound capable of binding to an insoluble phase. --

82
837
-- 347. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein said signal generating portion or said one or more chemically modified or artificially altered polynucleotides are capable of being detected by a member selected from the group consisting of an enzymatic measurement, a fluorescent measurement, a phosphorescent measurement, a chemiluminescent measurement, a colorimetric measurement, a microscopic measurement, an electron density measurement, a radioactive measurement and a binding step on an insoluble phase. --

C1
-- 348. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein the ratio of the nucleic acid sequences or segments in the second portion to the first portion of the molecular bridging entity is greater than 5. --

-- 349. (NEW) The composition according to claim 348, wherein the ratio is greater than 10. --

-- 350. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein the ratio of the signal generating portions or the one or more chemically modified or artificially altered polynucleotides to the nucleic acid portion in any or all of the signalling entities is greater than 1. --

-- 351. (NEW) The composition according to claim 350, wherein the ratio is greater than 5. --

-- 352. (NEW) The composition according to claim 351, wherein the ratio is greater than 10. --

-- 353. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein both the ratio of the nucleic acid sequences or segments in the second portion to the first portion of the molecular bridging entity is greater than 1, and the ratio of the signal generating portions or the one or more chemically modified or artificially altered polynucleotides to the nucleic acid portion in any or all of the signalling entities are greater than 1. --

-- 354. (NEW) The composition according to claim 353, wherein one or both ratios are greater than 5. --

C1

-- 355. (NEW) The composition according to claim 354, wherein one or both ratios are greater than 10. --

ind
E7

-- 356. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein the ratio of signalling entities to molecular bridging entity is greater than 5. --

-- 357. (NEW) The composition according to claim 356, wherein the ratio is greater than 10. --

-- 358. (NEW) The composition according to any of claims 284, 286, 288, 290, 293 or 294, wherein the analyte is immobilized. --

ind
E8

-- 359. (NEW) The composition according to any of claims 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293 or 294, wherein the molecular bridging entity is immobilized. --

-- 360. (NEW) An article of manufacture comprising:

sub H2
a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity second portion nucleic acid sequences or segments, and one or more ^{non-radioactive} signal generating portions, each capable of providing a detectable signal. --

C1
-- 361. (NEW) An article of manufacture comprising:

a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

y
more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity second portion nucleic acid sequences or segments, and one or more ^{non-radioactive} polynucleotides which have been chemically modified or artificially altered. --

-- 362. (NEW) The article of manufacture according to claims 360 or 361, further comprising the analyte. --

-- 363 (NEW) A process for detecting an analyte having one or more molecularly recognizable portions thereon, comprising:

providing the composition of any of claims 283, 285, 287, 289, 291 or 292;

forming a complex comprising said composition and said analyte; and

detecting said analyte by a signal provided by said signal generating portion or portions present in said complex. --

-- 364. (NEW) The process according to claim 363, characterized in that said forming step comprises contacting said analyte with said bridging entity to form a first complex and thereafter contacting the first complex with said signalling entity to form said complex. --

uh
fa
C1
-- 365. (NEW) The process according to claim 363, characterized in that said forming step comprises contacting said bridging entity with said signalling entity to form a first complex and thereafter contacting the first complex with said analyte to form said complex. --

-- 366. (NEW) The process according to claim 363, wherein detecting is directly carried out by means of a detectable signal provided by said signal generating portion. --

-- 367. (NEW) The process according to claim 366, wherein said detecting step the direct detectable signal provided by said signal generating portion comprises a radioactive compound. --

-- 368. (NEW) The process according to claim 366, wherein said detecting step the direct detectable signal is provided by a member selected from the group consisting of a fluorogenic compound, a phosphorescent compound, a chromogenic compound, a chemiluminescent compound and an electron dense compound. --

-- 369. (NEW) The process according to claim 368, wherein said detecting step the signal generating portion comprises an enzyme. --

-- 370. (NEW) The process according to claim 363, wherein detecting is indirectly carried out by means of a detectable signal provided by said signal generating portion. --

-- 371. (NEW) The process according to claim 370, wherein said detecting step the signal generating portion is selected from the group consisting of an antibody, an antigen, a hapten, a receptor, a ligand and an enzyme. --

-- 372. (NEW) The process according to claim 370, wherein said detecting step the signal generating portion comprises a polynucleotide sequence capable of recognizing a signal-containing moiety. --

-- 373. (NEW) The process according to claim 370, wherein said detecting step the signal generating portion comprises a compound capable of binding to an insoluble phase. --

-- 374. (NEW) The process according to claim 363, wherein said signal generating portion is capable of being detected by a member selected from the group consisting of an enzymatic measurement, a fluorescent measurement, a phosphorescent measurement, a chemiluminescent measurement, a colorimetric measurement, a microscopic measurement, an electron density measurement, a radioactive measurement and a binding step on an insoluble phase. --

-- 375. (NEW) The process according to claim 363, wherein the analyte is fixed or immobilized. --

-- 376. (NEW) The process according to claim 375, wherein fixing or immobilizing the analyte takes place before forming the complex. --

-- 377. (NEW) The process according to claim 375, wherein fixing or immobilizing the analyte takes place after forming the complex. --

-- 378. (NEW) The process according to claim 375, further comprising one or more washing steps. --

-- 379. (NEW) The process according to claim 363, wherein the molecular bridging entity is immobilized. --

-- 380. (NEW) The process according to claim 379, further comprising one or more washing steps. --

-- 381. (NEW) A process for detecting an analyte having one or more molecularly recognizable portion thereons, comprising:

providing the composition of any of claims 284, 286, 288, 290, 293 or 294;

forming a complex comprising the components of said composition and said analyte; and

detecting said analyte by a signal provided by said signal generating portion or portions present in said complex. --

21
-- 382. (NEW) The process according to claim 381, characterized in that said forming step comprises contacting said analyte with said bridging entity to form a first complex and thereafter contacting the first complex with said signalling entity to form said complex. --

-- 383. (NEW) The process according to claim 381, characterized in that said forming step comprises contacting said bridging entity with said signalling entity to form a first complex and thereafter contacting the first complex with said analyte to form said complex. --

sub E11
-- 384. (NEW) The process according to claim 381, wherein detecting is directly carried out by means of a detectable signal provided by said signal generating portion. --

-- 385. (NEW) The process according to claim 384, wherein said detecting step the direct detectable signal provided by said signal generating portion comprises a radioactive compound. --

-- 386. (NEW) The process according to claim 384, wherein said detecting step the direct detectable signal is provided by a member selected from the group consisting of a fluorogenic compound, a phosphorescent compound, a chromogenic compound, a chemiluminescent compound and an electron dense compound. --

-- 387. (NEW) The process according to claim 386, wherein said detecting step the signal generating portion comprises an enzyme. --

Sub
E
on
C1
-- 388. (NEW) The process according to claim 381, wherein detecting is indirectly carried out by means of a detectable signal provided by said signal generating portion. --

-- 389. (NEW) The process according to claim 386, wherein said detecting step the signal generating portion is selected from the group consisting of an antibody, an antigen, a hapten, a receptor, a ligand and an enzyme. --

-- 390. (NEW) The process according to claim 388, wherein said detecting step the signal generating portion comprises a polynucleotide sequence capable of recognizing a signal-containing moiety. --

-- 391. (NEW) The process according to claim 388, wherein said detecting step the signal generating portion comprises a compound capable of binding to an insoluble phase. --

-- 392. (NEW) The process according to claim 381, wherein said signal generating portion is capable of being detected by a member selected from the group consisting of an enzymatic measurement, a fluorescent measurement, a phosphorescent measurement, a chemiluminescent measurement, a colorimetric measurement, a microscopic measurement, an electron density measurement, a radioactive measurement and a binding step on an insoluble phase. --

-- 393. (NEW) The process according to claim 381, wherein the analyte is fixed or immobilized. --

sl
F9
-- 394. (NEW) The process according to claim 393, wherein fixing or immobilizing the analyte takes place before forming the complex. --

38
F9
-- 395. (NEW) The process according to claim 393, wherein fixing or immobilizing the analyte takes place after forming the complex. --

-- 396. (NEW) The process according to claim 393, further comprising one or more washing steps. --

sub
E12
-- 397. (NEW) The process according to claim 381, wherein the molecular bridging entity is immobilized. --

1
-- 398. (NEW) The process according to claim 397, further comprising one or more washing steps. --

-- 399. (NEW) A process for detecting an analyte having one or more molecularly recognizable portions thereon, comprising:

providing the composition of any of claims 283, 285, 287 or 289;

fixing or immobilizing said analyte or a sample containing said analyte to a solid support;

forming a complex comprising said composition and said analyte; and

detecting said analyte by a signal provided by said signal generating portion or portions present in said complex. --

sub
E13
-- 400. (NEW) The process according to claim 399, characterized in that said forming step comprises contacting said fixed or immobilized analyte with said bridging entity to form a first complex and thereafter contacting the first complex with said signalling entity to form said complex comprising said composition and said analyte. --

Sub E 1/3 cont
-- 401. (NEW) The process according to claim 399, characterized in that said forming step comprises contacting said bridging entity with said signalling entity to form a first complex and thereafter contacting the first complex with said fixed or immobilized analyte to form said complex comprising said composition and said analyte. --

-- 402. (NEW) The process according to claim 399, further comprising one or more washing steps prior to detection. --

21
-- 403. (NEW) The process according to claim 400, further comprising one or more washing steps prior to detection. --

-- 404. (NEW) The process according to claim 401, further comprising one or more washing steps prior to detection. --

-- 405. (NEW) A process for detecting an analyte having one or more molecularly recognizable portions thereon, comprising:

fixing or immobilizing said analyte or a sample containing said analyte to a solid support;

providing the composition of claims 291 or 292;

forming a complex comprising said composition and said analyte; and

detecting said analyte by means of the one or more chemically modified or artificially altered polynucleotides present in said complex. --

sub E-14
-- 406. (NEW) The process according to claim 405, characterized in that said forming step comprises contacting said fixed or immobilized analyte with said bridging entity to form a first complex and thereafter contacting the first complex with said signalling entity to form said complex comprising said composition and said analyte. --

21
-- 407. (NEW) The process according to claim 405, characterized in that said forming step comprises contacting said bridging entity with said signalling entity to form a first complex and thereafter contacting the fixed or immobilized analyte with the first complex to form said complex comprising said composition and said analyte. --

-- 408. (NEW) The process according to claim 405, further comprising one or more washing steps prior to detection. --

-- 409. (NEW) The process according to claim 406, further comprising one or more washing steps prior to detection. --

-- 410. (NEW) The process according to claim 407, further comprising one or more washing steps prior to detection. --

sub H-3
-- 411. (NEW) A kit for the detection in a sample of an analyte having one or more molecularly recognizable portions thereon, comprising as components thereof:

(i) a container carrying a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with said molecularly recognizable portion on said analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

(ii) a container carrying more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity, second portion nucleic acid sequence or segment, and one or more ^{non-radioactive} signal generating portions, each such portion being capable of providing a detectable signal. --

-- 412. (NEW) A kit for the detection in a sample of an analyte having one or more molecularly recognizable portions thereon, comprising as components thereof:

sub H3
a container carrying a complex which comprises:

U
a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with said molecularly recognizable portion, and a second portion comprising one or more nucleic acid sequences or segments; and

Y
more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity second portion, and one or more signal generating portions, each such portion being capable of providing a detectable signal. --

-- 413. (NEW) A kit for the detection in a sample of an analyte having one or more molecularly recognizable portions thereon, comprising as components thereof:

a container carrying more than one molecular bridging entity, each such entity comprising a first portion capable of recognizing and binding to or hybridizing with molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

a container carrying more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion to form a polynucleotide hybrid, and one or more signal generating portions capable of providing a detectable signal. --

-- 414. (NEW) A kit for the detection in a sample of an analyte having one or more molecularly recognizable portions thereon, comprising as components thereof:

sub
H3
more than one molecular bridging entity, each such entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

4
1/1
more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more ^{non-radioactive} signal generating portions capable of providing a detectable signal. --

-- 415. (NEW) A kit for the detection in a sample of an analyte having one or more molecularly recognizable portions thereon, comprising as components thereof:

a complex which comprises:

(i) more than one molecular bridging entity, each such entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

(ii) more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more signal generating portions capable of providing a detectable signal. --

-- 416. (NEW) A kit for the detection in a sample of an analyte having one or more molecularly recognizable portions thereon, comprising as components thereof:

sub
H3
a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion, and one or more polynucleotides which have been chemically modified or artificially altered. --

-- 417. (NEW) A kit for the detection in a sample of an analyte having one or more molecularly recognizable portions thereon, comprising as components thereof:

a complex which comprises:

a molecular bridging entity comprising a first portion capable of recognizing and binding to or hybridizing with a molecularly recognizable portion on an analyte, and a second portion comprising one or more nucleic acid sequences or segments; and

more than one signalling entity, each such entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion to form a polynucleotide hybrid, and one or more polynucleotides which have been chemically modified or artificially altered. --

-- 418. (NEW) The kit according to any of claims 411, 412, 413, 414 or 415, further comprising means to detect a signal from said signal generating portion. --

-- 419. (NEW) The kit according to claims 416 or 417, further comprising means to detect a signal from said one or more chemically modified or artificially altered polynucleotides. --

-- 420. (NEW) The kit according to any of claims 411, 412, 413, 414 or 415, wherein the ratio of the nucleic acid sequences or segments in the second portion to the first portion of the molecular bridging entity is greater than 5. --

-- 421. (NEW) The kit according to claim 420, wherein the ratio is greater than 10. --

cl
-- 422. (NEW) The kit according to any of claims 411, 412, 413, 414 or 415, wherein the ratio of the signal generating portions to the nucleic acid portion in any or all of the signalling entities is greater than 1. --

-- 423. (NEW) The kit according to claims 416 or 417, wherein the ratio of the one or more chemically modified or artificially altered polynucleotides to the nucleic acid portion in any or all of the signalling entities is greater than 1. --

-- 424. (NEW) The kit according to claim 423, wherein the ratio is greater than 5. --

-- 425. (NEW) The kit according to claim 424, wherein the ratio is greater than 10. --

-- 426. (NEW) The kit according to any of claims 411, 412, 413, 414 or 415, wherein both the ratio of the nucleic acid sequences or segments in the second portion to the first portion of the molecular bridging entity is greater than 1, and the ratio of the signal generating portions to the nucleic acid portion in any or all of the signalling entities is greater than 1. --

-- 427. (NEW) The kit according to claims 416 or 417, wherein both the ratio of the nucleic acid sequences or segments in the second portion to the first portion of the molecular bridging entity is greater than 1, and the ratio of the one or more chemically modified or artificially altered polynucleotides to the nucleic acid portion in any or all of the signalling entities is greater than 1. --

-- 428. (NEW) The kit according to claim 426, wherein one or both ratios are greater than 5. --

-- 429. (NEW) The kit according to claim 428, wherein one or both ratios are greater than 10. --

21

-- 430. (NEW) The kit according to claim 427, wherein one or both ratios are greater than 5. --

-- 431. (NEW) The kit according to claim 430, wherein one or both ratios are greater than 10. --

-- 432. (NEW) The kit according to any of claims 411, 412, 413, 414, 415, 416 or 417, wherein the ratio of signalling entities to the molecular bridging entity is greater than 5. --

-- 433. (NEW) The kit according to claim 432, wherein the ratio is greater than 10. --

-- 434. (NEW) The kit according to any of claims 411, 412, 413, 414 or 415, wherein said signal generating portion is carried in a separate container from the container carrying the signalling entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion. --

Pergolizzi et al.

Serial No.: 08/479/995

Filing Date: June 7, 1995

Page 30 (Second Preliminary Amendment - April 12, 1996)

-- 435. (NEW) The kit according to claims 416 or 417, wherein said one or more chemically modified or artificially altered polynucleotides are carried in a separate container from the container carrying the signalling entity comprising a nucleic acid portion capable of binding to or hybridizing with said bridging entity nucleic acid second portion. --

-- 436. (NEW) The kit according to any of claims 411, 412, 413, 414, 415, 416 or 417, wherein said analyte comprises a biological system. --

-- 437. (NEW) The kit according to any of claims 411, 412, 413, 414, 415, 416 or 417, further comprising one or more solid supports. --

* * * * *